

### **REMARKS**

Applicants respectfully request reconsideration of the present Application. Claims 12 and 39 have been amended herein. Care has been exercised to introduce no new matter. Claims 1-2, 5-7, 9-24, and 39-49 are pending herein. Claims 1-2, 5-7, 9-24, and 39-49 are believed to be in condition for allowance and such favorable action is respectfully requested.

#### **Rejections based on 35 U.S.C. § 101**

Claim 39 is rejected under 35 U.S.C. § 101 as the Office alleges that the claims are directed to non-statutory subject matter. Claim 39 has been amended herein to recite recordable computer-storage media. As such, the claim more clearly recites an article of manufacture and is now more clearly directed to statutory subject matter. Accordingly, Applicants respectfully request withdrawal of the § 101 rejection of claim 39.

#### **Rejections based on 35 U.S.C. § 103**

Claims 1-2, 5, 7-17, 19-24, and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,061,657 to Whiting-O'Keefe (hereinafter "Whiting-O'Keefe reference") in view of U.S. Patent No. 5,809,477 to Pollack (hereinafter "Pollack reference"), in further view of U.S. Patent No. 7,155,399 to Andre et al. (hereinafter "Andre reference"). As the asserted combination of references fails to teach or suggest all of the limitations set forth in the rejected claims, Applicants respectfully traverse the rejection, as hereinafter set forth.

Independent claim 1 recites a computer-implemented method for determining an amount of work provided by a health care provider for a particular patient. The method comprises: obtaining patient data for the particular patient directly from a primary clinical information system; determining a type of patient population that the particular patient is a

member of; accessing work factors for the type of patient population; comparing the data for the particular patient to the work factors to determine which factors are satisfied; accessing a weighted value for each satisfied work factor; assigning each satisfied work factor with a weighted score; calculating, with a computer processor, a work score for the particular patient using the satisfied work factors, wherein the work score indicates a quantity of personnel hours anticipated to serve the particular patient; and storing the particular patient's work score.

The Whiting-O'Keefe reference is cited in the outstanding office action as disclosing the following limitation: "calculating, with a computer processor, a work score for the particular patient using the satisfied work factors." *See Office Action* p. 3. It is respectfully submitted that the Whiting-O'Keefe reference does not teach or suggest "calculating, with a computer processor, a work score for the particular patient using the satisfied work factors," as recited in independent claim 1. To the contrary, the Whiting-O'Keefe reference discloses estimating "charges" for "episodes of care for identified primary and collateral illnesses." *See Whiting-O'Keefe reference* at Col. 7, lines 53-54.

Calculating a work score for a particular patient using satisfied work factors includes "determining a type of patient population that the particular patient is a member of; accessing work factors for the type of patient population; comparing the patient data for the particular patient to the work factors to determine which factors are satisfied; accessing a weighted value for each satisfied work factor; [and] assigning each satisfied work factor with a weighted score," as recited in amended independent claim 1. Work factors relate to the patient population to which the patient belongs. *See Specification* at ¶ [0049]. For example, a patient in the intensive care unit (ICU) is associated with a catalog of particular work factors related to treating ICU patients. *Id.* Patient data is compared to the work factors to assign weights to the

satisfied work factors. *See Specification* at ¶¶ [0054]-[0056]. A work score is then generated for a patient based on the weights assigned to the satisfied work factors for the particular patient. *See Specification* at ¶ [0057].

Because weights are assigned to the satisfied work factors, a work score calculated for a particular patient does not correlate directly to the charges estimated in the Whiting-O'Keefe reference. Further, a triggered work factor may be adjusted based on the particular patient, taking into account the relevant work factors, and the associated characteristics of the particular patient being treated. *See Specification* at ¶ [0055]. For example, drawing blood from any type of patient may generate a charge of \$20 each time the task is ordered under the Whiting-O'Keefe reference, but in the above-identified application, a higher-weighted work score may be generated to draw blood from an infant than from an adult patient. In fact, the Whiting-O'Keefe reference teaches away from a work score calculation that uses work factors satisfied by actual patient data. The Whiting-O'Keefe charge estimates depend on a table of regression coefficients calculated from healthcare encounter records. *See Whiting-O'Keefe reference* at Col. 8, lines 1-7. Further, the Whiting-O'Keefe reference admits that its system does not consider the data of the patient in question because it evaluates the charges to treat a specific patient or group of patients "who will usually *not* be included in the population from which the encounter records are taken." *Id.* at Col. 8, lines 21-24 (emphasis added).

As acknowledged in the outstanding Office Action, the Whiting-O'Keefe reference fails to describe "obtaining patient data for the particular patient directly from a primary clinical information system." *See Office Action* p. 4. For this, the Pollack reference is relied on. It is respectfully submitted that the Pollack reference does not cure the deficiencies of the Whiting-O'Keefe reference, as it also does not teach or suggest "calculating, with a computer

processor, a work score for the particular patient using the satisfied work factors,” or “determining a type of patient population that the particular patient is a member of; accessing work factors for the type of patient population; comparing the patient data for the particular patient to the work factors to determine which factors are satisfied; accessing a weighted value for each satisfied work factor; [and] assigning each satisfied work factor with a weighted score,” as recited by independent claim 1. The Pollack reference discloses quantifying the severity of a patient’s condition through retrieval of automated patient information. *See Pollack reference* Col. 4 lines 44-46, Col. 11, Lines 29-31, Col. 17, Lines 66-67. While the Pollack reference discloses “obtaining data,” for patients, the reference is directed towards evaluation of patient illness as it relates to the length of patient stay and patient bed availability. *See Office Action*, p. 4; *Pollack reference* Col. 3, lines 27-46. While these determinations are driven by “automated patient information,” the Pollack reference still does not teach or suggest the use of a “primary clinical information system” which relates to the “planning and documenting of care.” *See Specification* at ¶¶ [0006] and [0007].

It is respectfully submitted that the Andre reference does not cure the deficiencies of the Whiting-O’Keefe and Pollack references, as it also does not teach or suggest “obtaining patient data for the particular patient directly from a primary clinical information system; determining a type of patient population that the particular patient is a member of; accessing work factors for the type of patient population; comparing the data for the particular patient to the work factors to determine which factors are satisfied; accessing a weighted value for each satisfied work factor; assigning each satisfied work factor with a weighted score; and calculating, with a computer processor, a work score for the particular patient using the satisfied work factors,” as recited by independent claim 1. Additionally, the Andre reference fails to teach

“wherein the work score indicates a quantity of personnel hours anticipated to serve the particular patient,” as recited in independent claim 1. Rather, the Andre reference discloses a work score generated and assigned by a schedule evaluator based on employee schedule changes. *See Andre reference* Col. 5, Lines 35-39. The schedule generated by addition or removal of a patient depends upon the work performed by the changed employee. *See Andre reference* Col. 5, Lines 49-58. It is respectfully submitted that the amount of work performed by an employee added or removed from a schedule, as described by the Andre reference, is distinct from a work score based on the quantity of personnel hours anticipated to serve a particular patient. As previously discussed, a work score is calculated based on satisfying work factors for a particular patient. A work score, as described in the specification of the above-identified application, may be a “patient classification score, a workload score or any other value that assigns a classification value or an amount of work to the patient.” *See Specification*, ¶ [0052].

It is respectfully submitted that the Andre reference also does not teach or suggest “storing the particular patient’s work score,” as recited in independent claim 1. *See Office Action* p. 4. While the Andre reference discloses creating a score based on a change in employee schedules, this score does not teach or suggest “storing the work score,” as disclosed in independent claim 1. *See Andre reference* Col. 5, line 37. Thus, Applicants respectfully submit that the Whiting-O’Keefe, Pollack, and Andre references, either alone or in combination, fail to teach or suggest all of the limitations of independent claim 1. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a). Claim 1 is believed to be in condition for allowance and such favorable action is respectfully requested.

Each of claims 2, 5-7, and 9-11 depends either directly or indirectly from independent claim 1. As such, Applicants respectfully request withdrawal of the 35 U.S.C. §

103(a) rejection of these claims as well, for at least the above-cited reasons. Each of claims 2, 5-7, and 9-11 is believed to be in condition for allowance and such favorable action is respectfully requested.

Amended independent claim 12 is directed to one or more computer-storage media having computer-executable instructions embodied thereon, that when executed by a computing system having a processor and memory, cause the computing system to perform a method. The method comprises: obtaining patient data for one or more patients in a patient population directly from a primary clinical information system; determining a type of patient population that each of the one or more patients are a member of; accessing work factors for the type of patient population; comparing the patient data for each of the one or more patients to the work factors to determine which factors are satisfied; accessing a weighted value for each satisfied work factor; assigning each satisfied work factor with a weighted score; and calculating, with the processor, a work score for each of the one or more patients in the patient population using the satisfied work factors, wherein the work score indicates a quantity of personnel hours anticipated to serve each of the one or more patients; storing one or more work scores for the one or more patients in the patient population; and calculating staffing needs for the patient population based on the work scores obtained for the one or more patients in the patient population.

The Whiting-O'Keefe reference is cited in the outstanding office action as disclosing "calculating, with the processor, a work score for each of the one or more patients in a patient population." *See Office Action* p. 6. It is respectfully submitted that the Whiting-O'Keefe reference does not teach or suggest "obtaining patient data for one or more patients in a patient population directly from a primary clinical information system; determining a type of

patient population that each of the one or more patients are a member of; accessing work factors for the type of patient population; comparing the patient data for each of the one or more patients to the work factors to determine which factors are satisfied; accessing a weighted value for each satisfied work factor; assigning each satisfied work factor with a weighted score; and calculating, with the processor, a work score for each of the one or more patients in the patient population using the satisfied work factors, wherein the work score indicates a quantity of personnel hours anticipated to serve each of the one or more patients,” as recited in amended independent claim 12. To the contrary, the Whiting-O’Keefe reference discloses estimating “charges” for “episodes of care,” where the charges depend on a table of regression coefficients calculated from healthcare encounter records. *See Whiting-O’Keefe reference* at Col. 7, lines 53-54, and Col. 8, lines 1-7. As previously discussed, the Whiting-O’Keefe reference does not disclose calculating a work score that indicates a quantity of personnel hours anticipated to serve a particular patient. Additionally, charge estimations in the Whiting-O’Keefe reference are not based on “obtaining patient data for one or more patients in a patient population directly from a primary clinical information system.” Instead, the Whiting-O’Keefe reference evaluates the charges to treat patients “who will usually *not* be included in the population from which the encounter records are taken.” *See Whiting-O’Keefe reference* at Col. 8, lines 21-24 (emphasis added).

As acknowledged in the outstanding Office Action, the Whiting-O’Keefe reference fails to disclose “calculating staffing needs for the patient population based on the work scores obtained for the one or more patients in the patient population.” *See Office Action* p. 7. For this, the Pollack reference is relied on by the Office. The Pollack reference is generally directed to retrieving automated patient information to estimate bed availability for patients awaiting admission by evaluating the severity of the illnesses of patients already in a particular

population. *See Pollack reference* Col. 4, Lines 44-46, Col. 3, Lines 28-30, Col. 11, Lines 29-31, and Col. 17, Lines 66-67. Although the Pollack reference evaluates bed availability and severity of illness, it does not calculate “staffing needs for the patient population based on the work scores obtained for the one or more patients in the patient population,” as recited in amended independent claim 12. It is respectfully submitted that, although allocating hospital beds based on severity of illness may be considered a form of “work,” the work score calculation of claim 12 “indicates a quantity of personnel hours anticipated to serve each of the one or more patients.”

Additionally, it is respectfully submitted that the Pollack reference also does not cure the deficiencies of the Whiting-O’Keefe reference, as it also does not disclose “obtaining patient data for one or more patients in a patient population directly from a primary clinical information system; determining a type of patient population that each of the one or more patients are a member of; accessing work factors for the type of patient population; comparing the patient data for each of the one or more patients to the work factors to determine which factors are satisfied; accessing a weighted value for each satisfied work factor; assigning each satisfied work factor with a weighted score; and calculating, with the processor, a work score for each of the one or more patients in the patient population using the satisfied work factors, wherein the work score indicates a quantity of personnel hours anticipated to serve each of the one or more patients,” as recited in amended independent claim 12.

The Andre reference is cited in the outstanding office action as disclosing the following limitations: “wherein the work score is a value that indicates an amount of work to treat each of the one or more patients in the patient population,” and “storing one or more work scores for the one or more patients in the patient population.” *See Office Action* p. 7. It is respectfully submitted that the Andre reference does not cure the deficiencies of the Whiting-



O’Keefe or Pollack references. The Andre reference also does not teach or suggest the limitations stating: “wherein the work score indicates a quantity of personnel hours anticipated to serve each of the one or more patients,” and “storing one or more work scores for the one or more patients in the patient population,” as recited in amended independent claim 12. As previously discussed, the Andre reference discloses a work score assigned by a schedule evaluator based on employee schedule changes. *See Andre reference* Col. 5, Lines 35-39. The schedule generated by addition or removal of a patient depends upon the work performed by the changed employee. *See Andre reference* Col. 5, Lines 49-58. It is respectfully submitted that the amount of work performed by the employee added or removed from a schedule in the Andre reference is distinct from the work score “quantity of personnel hours anticipated to serve each of the one or more patients,” as recited in amended independent claim 12.

Thus, Applicants respectfully submit that the Whiting-O’Keefe, Pollack, and Andre references, either alone or in combination, fail to teach or suggest all of the limitations of independent claim 12. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 12 under 35 U.S.C. § 103(a). Claim 12 is believed to be in condition for allowance and such favorable action is respectfully requested.

Each of claims 13-24 depends either directly or indirectly from independent claim 12. As such, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of these claims as well, for at least the above-cited reasons. Each of claims 13-24 is believed to be in condition for allowance and such favorable action is respectfully requested.

Independent claim 40 recites a computer-implemented method for determining the amount of healthcare provider work for a population of patients. The method comprises: calculating, with a computer processor, a work score for each patient in a patient population

utilizing data obtained directly from a primary clinical information system, wherein the work score is a quantity of personnel hours required to serve each patient in the patient population by a healthcare provider; storing the work score for each patient; and calculating staffing needs for the patient population based on the work scores obtained for each patient in the patient population.

The Whiting-O'Keefe reference is cited in the outstanding Office Action as disclosing "calculating, with a computer processor, a work score for each patient in a patient population utilizing data obtained directly from a primary clinical information system." *See Office Action* p. 10. As previously discussed, the Whiting-O'Keefe reference is generally directed to estimating "charges" for "episodes of care for identified primary and collateral illnesses" that depend on a table of regression coefficients calculated from healthcare encounter records. *See Whiting-O'Keefe reference* at Col. 7, lines 53-54, Col. 8, lines 1-7. It is respectfully submitted that estimating "charges" for patient care based on a table of regression coefficients is distinct from calculating a "work score" for a particular patient based on information obtained from a primary clinical information system.

As acknowledged in the outstanding Office Action, the Whiting-O'Keefe reference fails to disclose "calculating staffing needs for the patient population based on the work scores obtained for each patient in the patient population." *See Office Action* p. 11. For this, the Pollack reference is relied on. As previously discussed, the Pollack reference is generally directed to quantifying the severity of a patient's condition, and expected length of stay, through retrieval of automated patient information. *See Pollack reference* Col. 4 lines 44-46, Col. 11, Lines 29-31, Col. 17, Lines 66-67. The Pollack reference utilizes this information to allocate available beds to incoming patients based on the severity of the illness. *See Pollack reference* Col. 3, lines 28-30. It is respectfully submitted that the Pollack reference does not

disclose “calculating staffing needs for the patient population based on the work scores obtained for each patient in the patient population,” as recited in independent claim 40. While the Pollack reference discloses the coordination of available beds for patients, it does not teach or suggest calculating “staffing needs” for a patient population based on the individual “work scores” obtained for each patient in the patient population.

As acknowledged in the outstanding Office Action, the Whiting-O’Keefe and Pollack references fail to disclose “wherein the work score is a quantity of personnel hours required to serve each patient in the patient population by a healthcare provider.” *See Office Action* p. 11. For this, the Andre reference is relied on. The Andre reference does not cure the deficiencies of the Whiting-O’Keefe or Pollack references. As previously discussed, the Andre reference is directed to a work score assigned by a schedule evaluator based on employee schedule changes. *See Andre reference* Col. 5, Lines 35-39. The schedule generated by addition or removal of a patient depends on the work performed by the changed employee. *See Andre reference* Col. 5, Lines 49-58. It is respectfully submitted that a work score generated based on an employee’s schedule is distinct from a work score that “is a quantity of personnel hours required to serve each patient in the patient population by a healthcare provider,” as recited in independent claim 40.

Thus, Applicants respectfully submit that the Whiting-O’Keefe, Pollack, and Andre references, either alone or in combination, fail to teach or suggest all of the limitations of independent claim 40. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 40 under 35 U.S.C. § 103(a). Claim 40 is believed to be in condition for allowance and such favorable action is respectfully requested.

Claims 6, 18, 39 and 49 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Whiting-O'Keefe reference, in view of the Pollack and Andre references, and further in view of U.S. Patent No. 6,193,654 to Richardson (hereinafter "Richardson reference"). Claims 6 and 18 depend from independent claims 1 and 12. Claim 6 is directed to the method of claim 1, further comprising adjusting the weighted value of one or more work factors triggered by the patient data based on rules. Claim 18 is directed to the media of claim 17, wherein the method further comprises adjusting the value of one or more factors triggered by the data.

As discussed above, the Whiting-O'Keefe, Pollack, and Andre references do not teach or suggest all of the limitations of claims 6 and 18, based at least in part on their dependency from independent claims 1 and 12. It is respectfully submitted that the Richardson reference does not cure the deficiencies of the Whiting-O'Keefe, Pollack and Andre references. The Richardson reference is generally directed to determining the severity of patient illnesses based on monitored predetermined parameters. *See Richardson reference* Col. 6, lines 47-49.

Applicants respectfully submit that the Whiting-O'Keefe, Pollack, Andre and Richardson references, either alone or in combination, fail to teach or suggest all of the limitations of dependent claim 6 and 18. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 6 and 18 under 35 U.S.C. § 103(a). Claims 6 and 18 are believed to be in condition for allowance and such favorable action is respectfully requested.

Independent claim 39 recites one or more recordable computer-storage media having computer-executable instructions embodied thereon that when executed by a computing system having a processor and memory, cause the computing system to perform a method. The method comprises: obtaining patient data for a particular patient at a first point in time directly

from a primary clinical information system; determining a type of patient population that the particular patient is a member of; accessing work factors for the type of patient population; comparing the patient data for the particular patient to work factors to determine which work factors are satisfied; accessing weighted values for each satisfied work factor; assigning each satisfied work factor with a weighted score; utilizing the weighted score to calculate a first instance of a work score for the particular patient using the satisfied work factors, wherein the first instance of a work score includes a measure of personnel hours anticipated for the particular patient at a first point in time; storing the first instance of a work score; obtaining patient data for the particular patient at a second point in time directly from a primary clinical information system; determining a type of patient population that the patient is a member of; accessing work factors for the type of patient population; comparing the patient data for the particular patient to work factors to determine which work factors are satisfied; accessing weighted values for each satisfied work factor; assigning each satisfied work factor with a weighted score; utilizing the weighted score to calculate a second instance of a work score for the particular patient using the satisfied work factors, wherein the second instance of a work score includes a measure of personnel hours anticipated for the particular patient at a second point in time; storing the second instance of a work score; and trending the work score for the particular patient, wherein the first instance of a work score is compared to a second instance of a work score for the particular patient based on the patient data in the primary clinical information system.

The Whiting-O'Keefe reference is cited in the outstanding Office Action as disclosing "utilizing the weighted score [to calculate] a first instance of a work score for the particular patient using the satisfied work factors," *See Office Action* p. 13. As previously discussed, the Whiting-O'Keefe reference discloses estimating "charges" for "episodes of care

for identified primary and collateral illnesses” that depend on a table of regression coefficients calculated from healthcare encounter records. *See Whiting-O’Keefe reference* at Col. 7, lines 53-54, Col. 8, lines 1-7. It is respectfully submitted that the Whiting-O’Keefe reference not teach or suggest “determining a type of patient population that the particular patient is a member of; accessing work factors for the type of patient population; comparing the patient data for the particular patient to work factors to determine which work factors are satisfied; accessing weighted values for each satisfied work factor; assigning each satisfied work factor with a weighted score; utilizing the weighted score to calculate a first instance of a work score for the particular patient using the satisfied work factors,” as recited in amended independent claim 39.

The Whiting-O’Keefe reference also does not teach or suggest “storing the first instance of a work score; obtaining patient data for the particular patient at a second point in time directly from a primary clinical information system; determining a type of patient population that the patient is a member of; accessing work factors for the type of patient population; comparing the patient data for the particular patient to work factors to determine which work factors are satisfied; accessing weighted values for each satisfied work factor; assigning each satisfied work factor with a weighted score; utilizing the weighted score to calculate a second instance of a work score for the particular patient using the satisfied work factors, wherein the second instance of a work score includes a measure of personnel hours anticipated for the particular patient at a second point in time; storing the second instance of a work score; and trending the work score for the particular patient, wherein the first instance of a work score is compared to a second instance of a work score for the particular patient based on the patient data in the primary clinical information system,” as recited in independent claim 39. Instead of utilizing satisfied work factors for a particular patient, the Whiting-O’Keefe reference evaluates the charges to treat a

specific patient or group of patients “who will usually *not* be included in the population from which the encounter records are taken.” *See Whiting-O’Keefe reference* at Col. 8, lines 21-24 (emphasis added).

Additionally, the Whiting-O’Keefe reference does not disclose calculating a first and second instance of a work score, as it does not teach or suggest “utilizing the weighted score to calculate a first instance of a work score for the particular patient using the satisfied work factors” or “utilizing the weighted score to calculate a second instance of a work score for the particular patient using the satisfied work factors,” as recited in independent claim 39.

As acknowledged in the outstanding Office Action, the Whiting-O’Keefe reference fails to disclose “obtaining patient data for a particular patient directly from a primary clinical information system.” For this, the Pollack reference is relied on by the Office. As previously discussed, the Pollack reference is generally directed to quantifying the severity of a patient’s condition, and expected length of stay, through retrieval of automated patient information. *See Pollack reference* Col. 4 lines 44-46, Col. 11, Lines 29-31, Col. 17, Lines 66-67. It is respectfully submitted that the Pollack reference does not teach or suggest “obtaining patient data for a particular patient at a first point in time directly from a primary clinical information system,” as recited in independent claim 39. The Pollack reference also does not teach or suggest collecting data for a second point in time, as it does not disclose “obtaining patient data for the particular patient at a second point in time directly from a primary clinical information system,” as recited in amended independent claim 39. Instead, the Pollack reference accesses patient information from an “automated information system” in order to determine the expected length of stay for a particular patient, rather than the actual “clinical” data required by independent claim 39 in generating a work score for a patient. *See Pollack reference* Column 11,

lines 26-32. It is respectfully submitted that determining the expected duration of hospital stay is distinct from retrieval of clinical information regarding a particular patient.

The Andre reference is cited in the outstanding Office Action as disclosing “wherein the first instance of a work score includes a measure of personnel hours anticipated for the particular patient at a first point in time.” The Andre reference does not cure the deficiencies of the Whiting-O’Keefe or Pollack references. As previously discussed, the Andre reference is directed to a work score assigned by a schedule evaluator based on employee schedule changes. *See Andre reference* Col. 5, Lines 35-39. The schedule generated by addition or removal of a patient depends on the work performed by the changed employee. *See Andre reference* Col. 5, Lines 49-58. It is respectfully submitted that the amount of work performed by the employee added or removed from a schedule in the Andre reference is distinct from the work score, “wherein the first instance of a work score includes a measure of personnel hours anticipated for the particular patient at a first point in time,” as recited in independent claim 39. The Andre reference also does not disclose, “wherein the second instance of a work score includes a measure of personnel hours anticipated for the particular patient at a second point in time,” as recited in independent claim 39. While the Andre reference adjusts assigned “work” based on employee schedule changes, the Andre reference does not evaluate a first or second instance of work scores which measure “personnel hours anticipated for [a] particular patient.”

The Richardson reference is cited in the outstanding Office Action as disclosing “trending the work score for the particular patient.” *See Office Action* p. 14. The Richardson reference does not cure the deficiencies of the Whiting-O’Keefe, Pollack, and Andre references discussed above. Thus, Applicants respectfully submit that the Whiting-O’Keefe, Pollack, Andre, and Richardson references, either alone or in combination, fail to teach or suggest all of



the limitations of independent claim 39. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 39 under 35 U.S.C. § 103(a). Claim 39 is believed to be in condition for allowance and such favorable action is respectfully requested.

Dependent claim 49 further defines novel features of the claimed embodiments and depends from independent claim 39. As such, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of this claim as well, for at least the above-cited reasons. Claim 49 is believed to be in condition for allowance and such favorable action is respectfully requested.

Independent claim 41 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Whiting-O'Keefe in view of U.S. Publication No. 2003/0101076 to Zaleski (hereinafter "Zaleski reference"). Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of independent claim 41 as hereinafter set forth.

Amended independent claim 41 is directed to a computerized system for optimizing personnel planning in a healthcare organization. The system comprises a work calculation module for calculating a work score for one or more patients; a staff scheduling and staffing module for receiving input from the work calculation module about prospective workload and identifying healthcare personnel positions to be filled; a role management module for managing the roles and information regarding personnel; a workforce outcomes module for determining how effectively healthcare personnel have been used; a demand forecast module for forecasting the volume and type of patients who will present, communicating information regarding a forecasted demand generated by the demand forecast module to the work calculation module, and communicating information to the staff scheduling and staffing module to help determine anticipated clinical demand; and a resource dashboard module for receiving

information regarding staff scheduling from the staff scheduling and staffing module, receiving work calculations for the patient population from the work calculation module, and displaying information regarding personnel and patients.

The Whiting-O'Keefe reference is cited in the outstanding office action as disclosing "a work calculation module for calculating a work score for one or more patients," "receiving input from the work calculation module about prospective workload," "a demand forecast module for forecasting the volume and type of patients who will present," "communicating information regarding a forecasted demand generated by the demand forecast module to the work calculation module and communication information," "a resource dashboard module for displaying information regarding personnel and patients," and "receiving work calculations for the patient population from the work calculation module." *See Office Action* p. 16. The outstanding Office Action also states that the "[s]ystem claim 41 repeats the subject matter of method claim 1 respectively, as a system rather than a series of steps. As the underlying process of claim 1 has been shown to be fully disclosed by the teachings of Whiting-O'Keefe in the above rejection of claim 1, it is readily apparent that the limitations disclosed by Whiting-O'Keefe include the apparatus to perform these functions. As such, these limitations are rejected for the same reasons given above for method claim 1 and incorporated herein." *Id.*

As previously discussed, applicants respectfully submit that the Whiting-O'Keefe reference does not teach or suggest "calculating, with a computer processor, a work score for the particular patient using the satisfied factors, wherein the work score indicates a quantity of personnel hours anticipated to serve the particular patient," as recited in independent claim 1. To the contrary, the Whiting-O'Keefe reference discloses estimating "charges" for "episodes of care for identified primary and collateral illnesses." *See Whiting-O'Keefe reference* at Col. 7, lines

53-54. These charge estimates depend on a table of regression coefficients calculated from healthcare encounter records. *Id.* at Col. 8, lines 1-7. It is respectfully submitted that the Whiting-O’Keefe reference not teach or suggest “calculating ... a work score for the particular patient using the satisfied factors,” as in independent claim 1. In fact, the Whiting-O’Keefe reference teaches away from such a calculation using actual patient data. Further, the Whiting-O’Keefe reference admits that its system does not consider the data of the patient in question because it evaluates the charges to treat a specific patient or group of patients “who will usually *not* be included in the population from which the encounter records are taken.” *See Whiting-O’Keefe reference* at Col. 8, lines 21-24 (emphasis added). Additionally, the Whiting-O’Keefe reference does not disclose calculating a work score by “determining a type of patient population that the patient is a member of; accessing work factors for the type of patient population; comparing the patient data to the work factors to determine which factors are satisfied; accessing a weighted value for each satisfied work factor; assigning each satisfied work factor with a weighted score,” as recited in amended independent claim 1. As such, it is respectfully submitted that the Whiting-O’Keefe reference does not implicitly disclose some or all of the system steps of amended independent claim 41 by virtue of its relation to the method steps of independent claim 1.

As acknowledged in the outstanding Office Action, the Whiting-O’Keefe reference fails to disclose “a staff scheduling and staffing module for identifying healthcare personnel positions to be filled,” “role management module for managing the roles and information regarding personnel,” and “a workforce outcomes module for determining how effectively healthcare personnel have been used.” *See Office Action* pp. 17-18. For this, the Zaleski reference is relied on. The Zaleski reference is generally directed to scheduling and

allocating healthcare staff to where they are most needed. *See Zaleski reference* ¶ [00007]. It is respectfully submitted that the Zaleski reference does not cure the deficiencies of the Whiting-O'Keefe reference as it also does not disclose "a work calculation module for calculating a work score for one or more patients."

Applicants respectfully submit that the Whiting-O'Keefe and Zaleski references, either alone or in combination, fail to teach or suggest all of the limitations of independent claim 41. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 41 under 35 U.S.C. § 103(a). Claim 41 is believed to be in condition for allowance and such favorable action is respectfully requested.

Claims 42 and 43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Whiting-O'Keefe reference, in view of the Zaleski reference, in further view of U.S. Patent No. 7,076,436 to Ross, Jr. et al. (hereinafter "Ross reference"). Dependent claims 42 and 43 further define novel features of the claimed embodiments and each depend from independent claim 41. The Ross reference fails to cure the deficiencies of the Whiting-O'Keefe, Pollack, and Zaleski references discussed above. Accordingly, for at least the reasons set forth above with respect to independent claim 41, dependent claims 42 and 43 are believed to be in condition for allowance by virtue of their dependency, and such favorable action is respectfully requested. Withdrawal of the rejection of dependent claims 42 and 43 is respectfully requested.

Claims 44 and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Whiting-O'Keefe reference, in view of the Zaleski reference, in view of the Ross reference, and in further view of the Richardson reference. Dependent claims 44 and 45 further define novel features of the claimed embodiments and each depend from independent claim 41. The Ross and Richardson references fail to cure the deficiencies of the Whiting-O'Keefe,

Pollack, and Zaleski references discussed above. Accordingly, for at least the reasons set forth above with respect to independent claim 41, dependent claims 44 and 45 are believed to be in condition for allowance by virtue of their dependency, and such favorable action is respectfully requested. Withdrawal of the rejection of dependent claims 44 and 45 is respectfully requested.

Claims 46 and 47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Whiting-O'Keefe reference, in view of the Zaleski reference, in view of the Ross reference, in view of the Richardson reference, and in further view of the Pollack reference. Dependent claims 46 and 47 further define novel features of the claimed embodiments and each depend from independent claim 41. The Ross and Richardson references fail to cure the deficiencies of the Whiting-O'Keefe, Pollack, and Zaleski references discussed above. Accordingly, for at least the reasons set forth above with respect to independent claim 41, dependent claims 46 and 47 are believed to be in condition for allowance by virtue of their dependency, and such favorable action is respectfully requested. Withdrawal of the rejection of dependent claims 46 and 47 is respectfully requested.

Claim 48 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the Whiting-O'Keefe reference, in view of the Zaleski reference, in view of the Ross reference, in view of the Richardson reference, in view of the Pollack reference, in further view of U.S. Publication No. 2003/0050797 to Brandt et al. (hereinafter "Brandt reference"). Dependent claim 48 further defines novel features of the claimed embodiments and depends from independent claim 41. The Ross, Richardson, and Brandt references fail to cure the deficiencies of the Whiting-O'Keefe, Pollack, and Zaleski references discussed above. Accordingly, for at least the reasons set forth above with respect to independent claim 41, dependent claim 48 is believed to be in condition for allowance by virtue of its dependency, and such favorable action

is respectfully requested. Withdrawal of the rejection of dependent claim 48 is respectfully requested.

### **CONCLUSION**

For at least the reasons stated above, claims 1-2, 5-7, 9-24, and 39-49 are believed to be in condition for allowance. Applicants respectfully request withdrawal of the pending rejections and allowance of the claims. If any issues remain that would prevent issuance of this application, the Examiner is urged to contact the undersigned – 816-474-6550 or [aerickson@shb.com](mailto:aerickson@shb.com) (such communication via email is herein expressly granted) – to resolve the same.

The fee for a Request for Continued Examination is submitted herewith by way of electronic payment. It is believed that no additional fee is due. However, if this belief is in error, the Commissioner is hereby authorized to charge any amount required to Deposit Account No. 19-2112, CRNI.108473.

Respectfully submitted,

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